[1009] In various embodiments, a SRR antenna **2508** may be integrated into a configuration of medical components in which one or more implantable medical devices, operating within the human body, communicate wirelessly to a hand-held, body-mounted, or remote control unit. In certain embodiments, both body-mounted and in-body wireless devices may utilize a SRR antenna **2508** for wireless communication. Additionally, one or more of the components utilizing a SRR antenna **2508** may be completely surrounded by human skin, tissue or other dielectric material. By way of example, such a configuration may be used in conjunction with a heart monitoring/control system where stability and consistency of wireless data transmission are of fundamental concern.

[1010] In various other embodiments, a SRR antenna **2508** may be integrated into the embodiments of the infusion pump assembly. In some embodiments, the SRR antenna **2508** may be integrated into a configuration of medical components in which one or more electrical sensors positioned on, or attached to, the human body wirelessly communicate to a remote transceiving unit. By way of example, a plurality of electrodes positioned on the body may be coupled to a wireless unit employing a SRR antenna **2508** for wireless transmission to a remotely located electrocardiogram machine. By way of further example, a wireless temperature sensor in contact with human skin may employ SRR antenna **2508** for wireless communication to a controller unit for temperature regulation of the room in which the sensor resides.

System for Verification of Volume and Pumping

[1011] Infusion pump therapy includes volume and time specifications. The amount of fluid dispensed together with the dispense timing are two critical factors of infusion pump therapy. As discussed in detail below, the infusion pump apparatus and systems shown and described herein provide for a method of dispensing fluid together with a device, system and method for measuring the amount of fluid dispensed. However, in a circumstance where the calibration and precision of the measurement device calibration is critical, there are advantages to determining any compromise in the precision of the measurement device as soon as possible. Thus, there are advantages to off-board verification of volume and pumping.

[1012] As shown in the figures, the disposable assembly includes a reservoir for holding the infusible fluid for pumping. There are various methods and devices for filling the reservoir with infusible fluid, many embodiments are discussed above. An additional embodiment and system for both verifying the volume of fluid filled in the reservoir and verifying the integrity of the pumping system is discussed below.

[1013] In one embodiment, a weight scale is used to determine the volume of fluid filled into the disposable and may also be used for verification by comparing the before-use volume with the after-use volume of the disposable. In some embodiments, this is accomplished by weighing the disposable before and after reservoir filling is complete. In some embodiments, the weight scale may be reset to zero) (i.e., tared) to the disposable prior to filling. In other embodiments, a weight may be taken before the fill and afterwards. In some embodiments, a processor may calculate the weight of the fluid filled and correlate the weight to a volume of fluid. In some embodiments, the display on the scale may automatically display the volume of fluid that has been filled in the reservoir. The method of filling may be any discussed above, or an automatic fill, as discussed below. In addition, in some embodiment, a pre-filled reservoir may be used and thus, filling is not necessary, rather, the weight would be taken prior to loading the reservoir and after reservoir loading.

[1014] An exact calculation of the volume of fluid in a reservoir may be used to verify the measurement system of the pumping device. For example, following the use of the disposable, where the system either stores, or, receives via an input the before-use weight at fill of the disposable, the system, taking the after-use weight, may determine the volume of fluid difference between before-use and after-use. This information may be used as a check to the pumping system to verify the amount of fluid pumped from the given reservoir.

[1015] Additionally, the exact volume of fluid filled may be entered into the pumping system which may be used by the system to warn the user of low-volume reservoir or present to the user an accurate volume of fluid remaining in the reservoir at any given time.

[1016] Referring now to FIG. **205**, one embodiment of the system includes a combination charger, disposable fill and integrity verification station **2900**. The charger station **2900** includes a charging section **2902** for a reusable assembly, a charging section **2904** for a remote control device, and a weight scale **2906**. The weight scale **2906** in some embodiments may be sized to accommodate a disposable assembly **2908**. In the exemplary embodiment, the station also includes a fill adapter septum **2910** that accepts a filling cap **2912** (including a filling needle for piercing the septum **2910**). In some embodiments, the filling needle is attached to a fluid line **2914** which may be a flexible tubing of a predetermined length suitable for reaching around the station **2900** to, in some embodiments, a fluid vial or fluid container holder **2916**. The container holder **2916** may be sized to accommodate a fluid vial **2918**. In addition to the features shown in FIG. **205**, in some embodiments, the station **2900** may include a pump for pumping the fluid from the container **2918** into the disposable assembly **2908**. In some embodiments, the pump may be a peristaltic pump. However, in other embodiments, the pump may be a diaphragm pump or any of pump known in the art. The pump may be used to automatically fill the reservoir in the disposable **2908**. In some embodiment, a user attaches the container cap **2920** (including a needle) to the fluid container **2918** as well as the filling cap **2912** to the fill adapter septum **2910**. The pump evacuates air from the disposable and uses it to pressurize the vial. The pump then pulls fluid from the container **2918** and fills the disposable **2908** reservoir. Also, whilst filling the reservoir, the system may provide enough positive pressure to additionally prime the fluid path and the cannula of the disposable.

[1017] In some embodiments, the station **2900** may also include a display for communication to a user of the volume of fluid currently in the disposable **2908**. This may be used to fill the reservoir to a desired volume. Additionally, in some embodiments, the station **2900** may wirelessly communicate to a remote controller (not shown) or other device, the volume of fluid filled into the reservoir. In some embodiments, when a user is finished with a disposable, the user will weight the after-use disposable. The system will communicate with the pumping system and correlating the data,